DOCUMENT RESUME

ED 086 793 CE 000 791

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TITLE Education and the Changing Society.
PUB DATE 25 May 72
NOTE 14p.; Address presented at the Commencement Exercises at Hawaii Community College--University of Hawaii, Hilo, May 25, 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Change Agents; Changing Attitudes; Education; *Educational Development; *Relevance (Education); Social Attitudes; *Social Change; Social Environment; *Technological Advancement; *Technology

ABSTRACT

Recent technological advances have resulted in sharp breaks with all previous human experience. The realization that unbridled scientific growth and technological innovation are no longer self-evident goals opens the way for young people starting their careers to decide the future form of their social lives. It is only through controlled change and inventive technology that man can cope with the problems of the future. The effects of technological advance are not inherent in technology itself but depend on what man will do with technology. There is ample evidence of the need for the individual to possess the capacity to adapt quickly to a changing world and it is here that the impact of education must be felt. In our changing society, it is highly unlikely that education will ever again be considered terminal at any given point or level. Skills that are learned today will, too soon, become obsolete in the rapidly changing future. Lifelong learning appears to be the only hope we have of mastering our advancing technology. (Author/SA)

ED 086793

EDUCATION AND THE CHANGING SOCIETY

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CE 000 191

Address Presented at the Commencement Exercises at Hawaii Community College --University of Hawaii at Hilo, May 25, 1972

By our presence here today, you, your parents, and I are filling very traditional roles. Generations of graduates have sat restlessly in their hot black gowns as they were bored by longwinded speakers pontificating about the same time-worn themes. Generations of justly proud parents have watched anxiously as their sons and daughters received their degrees for they have suffered and worked for this moment fully as much as you have although in different ways. And generations of speakers have come to podiums on these same occasions to tell graduates about the responsibilities they must bear and the opportunities which await them in the Golden Age to come. And I wouldn't dream of depriving you of that same opportunity which I experienced many years ago. I can't promise not to be boring but I can promise not to be longwinded!

As I come to this new campus for the first time I see a community meeting today's challenges by creating a new institution dedicated to the preparation of its youth for today and tomorrow. All who are assembled here -- parents, students, friends, faculty, and administrative staff -- are a part of this dynamic institution which has come so far in so short a time under the leadership of Provost Mitsugu Sumada.

It is expecially exciting to see the emphasis on occupational careers as well as the preparation for baccalaureate and professional preparation. It is heartening to see the breadth of the fields of the technical education programs serving, for example, your agricultural and natural resource industry, the building industry through architectural drafting, sophisticated modern communication and computational technologies with computer and electrical technologies, and the awareness of social technology reflected in your police science program.

This institution has changed as has man himself for man has attained, in great measure, a goal which he has long anticipated and desired. He has become in Descartes' phrase, "the master and possessor of nature." He has precipitated a scientific and technological revolution which continues at an ever-increasing pace and has largely accomplished the substitution of knowledge for labor as the principal force of production within our society.

During the past 60 years, man has broken sharply with all human experience; he has reversed his relationship to the earth's resources. Agriculture, the original basis of civilization, itself has lost its dominance! In the United States it now employs fewer than 6 percent of the economically active population. And today, more than 50% of the non-farm labor force have ceased to wear the blue collar of the factory worker or manual laborer.

This incredible phenomenon of rapid social change has led Kenneth Poulding, a well known economist and imaginative social thinker, to proclaim the present moments as a "turning point" in human history. He asserts that, "the world of today is as different from the world in which I was born as that world was from Julius Caesar's. I was born in the middle of human history. To date, roughly, almost as much has happened since I was born as happened before." The truth of this startling statement can be illustrated in a number of ways. For example, Alvin Toffler, in his book Future Shock, has observed that "if the last 50,000 years of man's existence were divided into lifetimes of approximately 62 years each, there have been 800 lifetimes (to date). Of these, fully 650 were spent in caves. Only during the last 70 lifetimes has it been possible to communicate effectively from one lifetime to another, as writing has made it possible to do. Only during the last 6 lifetimes did masses of men see the printed word. Only during the last 4 has it been possible to measure time with any precision. Only in the last 2 has anyone anywhere used an electric motor. And the overwhelming majority of all the material goods we use in daily life today have been developed within the present, the 800th lifetime." In summation then, man has spent 10,000 years for agriculture, a century or two for industrialism, and now opening before us what Toffler terms "the age of super-industrialism or the " post-industrial society."

These tremendous scientific and technological achievements, however, have taken on an increasingly problematic character. After three centuries during which they were regarded almost universally as the supreme means of solving human problems, they have now come to be seen by many people as the source of problems which they are perhaps unable to solve. For example, in the field of medicine, we now have more new treatments and cures than ever before with the result that the medical profession has become increasingly differentiated and specialized and tends to concentrate its efforts in a few major urban centers of medical excellence. The obvious corollary to this fact is that the availability of adequate medical care elsewhere is declining. And although there have been marvelous transportation improvements, mass communication innovations, and the like since World War II with resultant benefits to education, journalism, commerce, and sheer convenience, these have also been accompanied by a rise in social unrest.

Technology's continued advance has created as much anxiety, and even fear, as it has satisfaction; and these sentiments have begun to take form in movements of criticism and opposition to the current state of scientific civilization. For example, you may recall that in 1969 a group of scientists from the Massachusetts Institute of Technology tried to organize a nationwide work stoppage on all scientific projects until some serious thought and analysis could be

given to the direction and consequences of our "super industrial" technology. And recent years have also witnessed the advent of the counter culture with its emphasis on a more simplistic form of life in close communion with nature.

What, you may ask, has precipitated these types of reactions? Initially, no doubt, it was the discovery and use of nuclear weapons that produced these widespread doubts as to whether increasing scientific knowledge could be equated with increasing human happiness. The menace of nuclear war has kept these doubts alive; and they have been strengthened by other, unwelcome byproducts of technological advance such as the population explosion, pollution of the environment, depletion of natural resources, occupational and social dislocations, and threats to privacy and the political significance of the individual.

We have now reached in human history, however, the point of recognition of the multiplicity of time and space. Because of transportation and communication innovations, contemporary man can experience a thousand lives in a thousand places in as many years - all in one moment. Every seasoned reporter has had the experience of working on a fast breaking story that changes its shape and meaning before his words are put down on paper. Today, the whole world is a fast breaking story. There are no longer any national boundaries as the network of social ties is so tightly inter-woven that the consequences of contemporary events radiate instantaneously around the world.

Heavy consumption of the world's natural resources here in the United States widens the enormous political, economic, and social gaps between our country and less developed nations.

Marshall McLuhan notes that the "medium, or process, of our time-electronic technology is shaping and restructuring patterns of social interdependence and every aspect of our personal lives. It is forcing us to reconsider and reevaluate practically every thought, every action, and every institution formerly taken for granted. Everything is changing: you your family, your neighborhood, your education, your job, your government, your relation to others. And they are changing dramatically." McLuhan claims that "time has ceased, space has vanished, that we now live in a global village, a simultaneous happening" in which every action taken by an individual is likely to have an ecological, economic, political and social repercussions of which we may not even be aware. John Donne's famous phrase that " No man is an island," rings particularly true today. Fortunately, most people now realize that unbridled scientific growth and technological innovation are no longer self-evident goals. Thus, the way is open for young men and women such as yourselves to decide the future form of your social lives and the contribution you can make to your country and to mankind!

What Toffler calls "future shock" - the shattering stress and disorientation that we induce in individuals by subjecting them to too much change to fast - can be arrested by controlling both

the rate as well as the direction of change in your personal lives and society at large. Although increased technology and rapid social change have heretofore been portrayed as the protagonists which intensify existing social problems they contain within them the seeds of man's liberation. For it is only through controlled change and inventive technology that man can cope with the problems of the future.

In the years to come, there will be only two kinds of people the victims of "future shock" and the victors over it. Traditionally, the colleges and universities have prepared individuals to meet these types of challenges, and I am sure that the education you have received here at Hawaii Community College has equipped you with the ability to recognize and adapt to rapidly changing social, economic, and political conditions. You have, through your education, acquired the tools for humanizing the future in a time when changing our relationship to the resources that surround us, by violently expanding the scope of change, and by accelerating its pace, we have broken so irretrievably with the past.

Some of you may be tempted to ask yourselves, "Why bother - why not drop out, why not try to turn the clock back to some more pristine form of existence? Wouldn't that enhance my potential for individual freedom in this confusing, rapidly changing world?"

This response, I think, would be a mistake, for while sentimentalists prattle about the supposedly unfettered freedom of the primitive man, evidence collected by anthropologists and historians alike contradicts them. John Gardner, the former Secretary of Health, Education and Welfare, put the matter tersely when he said: "the primitive tribe or pre-industrial community has usually demanded far more profound submission of the individual to the group than has any modern society." As an Austrialian social scientist was told by a Temne tribesman in Sierra Leone: "When Temne people choose a thing, we must all agree with the decision --- this is what we call co-operation." This is, of course, is what we call conformity!

Thus while the post-industrial society might appear to herald a decline in personal freedom, the elevation of the group above the individual, and a submersion of the individuals' political significance, these results are by no means foregone conclusions. Increased personal freedom and responsiveness by government to the needs of the individual will not come about automatically. It will become a matter of the wise and creative implementation of technology itself. In his study of the effects of technology on the future of society, Emanuel Mesthene, of Harvard University said that if we wish to preserve even modified democratic values in a multibillion person society, then increased uses of the computer, mass data processors, and new communications networks are an absolute necessity.

other dictatorships in history was the one factor that would inevitably increase in the future. for Hitler used technology in his assault on humanity. With it, he dominated his own people. Telephone, teletype, and radio made it possible to transmit his commands directly to all levels in German society, where because of their high authority they were carried out uncritically." Speer then went on to say that "the more technological the world becomes, the more essential will be the need for critical thinking on the part of the individual.

Sociology tells us that pace and complexity of modern urban living cause much of the alienation that exists in society today. But this is merely additional evidence of the need for the individual to possess the capacity to adapt quickly to a changing world. Cybernetics, for example, has eliminated hundreds of blue collar occupations but has simultaneously created a multiplicity of new occupations that didn't exist even five years ago.

The point of all this is that you will have to be able to think critically as an individual and adapt to change quickly if you are to succeed in the future! The central task of your future education is to expand the adaptive capabilities you now possess. It is no longer sufficient to understand the past or even the present. You must now learn to make repeated, probabilistic, increasingly long-range assumptions about future jobs, family forms, human relationships, ethics, morals,

Using an analogy from ballet: as the set becomes more complex, the choreography required to maintain a given level of coordination becomes far more difficult. The computer, modern data processors, and new tele-communications networks provide the refinement and the means to treat people both as individuals and as a part of society as a whole.

Mesthene also recognized that the central problem about technological advance is that "while it creates new possibilities for human choice and action, it leaves their disposition uncertain." Thus, what its effects will be and what ends it will serve are not inherent in technology itself, but depend on what man will do with technology. Technology thus makes possible a future of open ended options but only if you realize that it can have both positive and negative effects, usually both at the same time. There are two distinct problems then in the age of super-industrialism. The first is a positive one taking full advantage of the opportunities it offers. The second is a negative one avoiding the unfortunate consequences which flow from the exploitation of these opportunities.

Albert Speer, who served as Hitler's Minister of Armaments a controversial figure and perceptive observor of society, issued a prophetic warning to the world at his Nuremberg Trial. He said that "the factor that distinguished Hitler's tyranny from that of all

technology, and organizational structures. You must rethink every aspect of our post-industrial civilization. This is what social critics like Ralph Nader and Rachel Carson have been trying to tell us, that the unwelcome byproducts of increased technology and scientific innovation are with us today because it has up until now been no one's explicit business to foresee and anticipate them.

That is the task that faces you in the future! The education you have received here at Hawaii Community College has given you a start and a capacity to deal with the present. But you must constantly strive to increase understanding of the entire range of human motivations and emotions. Literature and the arts traditionally has supplied much of this insight, but you must now supplement these aids with technology itself. Through instant information retrieval and modern communications devices you can overcome the fragmentary approach which we have previously used to try to solve the world's problems. Because of technology we can now instantly absorb a sense of the whole subject - a gestalt of the world rather than just a grasp of the immediate or the provincial.

Thus if you have a firm grasp of the fact that technology can be both boon and burden at the same time, you will be able to begin to cope with the strains of a "super-industrial age." You must shift

your education into the future tense, for in the years ahead, we cannot afford to let anyone become as Speer put it "an uncritical receiver of orders."

As Ervin Harlacher stated in his book, The Community Dimension of the Community College, "Education, today, is a continuous and total process requiring both formal and informal experiences. Prior to the present generation it was possible for a person to attend a system of formalized education during his youth and learn enough about the nature of man and his environment and develop sufficient personal and civic competence to last him during his lifetime."

In our changing society, it is highly unlikely that education will ever again be considered terminal at any given point or level. On the contrary, career education is apt to become a lifelong process. Skills that are learned today will, too soon, become obsolete in the rapidly changing future. This new concept calls for turning out graduates with minds and spirits that accept without question the idea of continued and continuous learning. Lifelong learning appears to be the only hope we have of mastering our advancing technology.

As each of you pass this significant milestone in your career, remember that education is a lifelong process! Continue your education not only to assure your own personal fulfillment in the years ahead but to help this great Nation of ours remain strong and free!

Congratulations and best wishes to all of you!